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Guinea, forming materials for a history of the discovery of this country by Spanish navigators from 1528 to 1606, with a map. M. Marché has returned from the west coast of Africa after exploring Upper Ogooné. M. Wiener has finished his explorations of the Andes. Mr. N. B. Wyse, member of the International Society of the Inter-oceanic Canal by the Isthmus of Darien, is now making a new exploration in this region.

Prof. Mohn, in Petermann's *Mittheilungen* for January, gives an original map of the relief of the sea-bed between the British Isles, Norway, Spitzbergen and Greenland. On this the contour lines of equal depths for each 100 fathoms are shown, and the grand feature of this region, the submarine barrier which passes from the north of the British Isles across by the Farøe islands and Iceland to Greenland, rises for the first time distinctly to view. It is this great barrier, says the *Academy*, that mainly determines the conditions of the deep seas on each side of it. The depth of the Atlantic on the south-western side are filled up with warmer water, but as soon as the barrier is crossed this is limited to the uppermost strata. On the Atlantic side of the ridge a mass of ice-cold water occupies the sea in its greatest depths, and is prevented by the barrier from penetrating into the depths of the Atlantic. Prof. Mohn also proposes that the sea between Norway and the Farøe islands, from Mayen and Spitzbergen, which has never been distinguished by any special name, be called the "Norwegian sea."

Gerhard Rohlfs is to undertake a new journey of exploration in the Eastern Sahara, which is planned to extend over five years.

#### MICROSCOPY.<sup>1</sup>

BULLOCH'S MICROSCOPES. — Mr. W. H. Bulloch, 126 Clark street, Chicago, has issued a well illustrated description of his recent improvements in the construction of the microscope, in which appear several points of novelty and importance. The new large stand is literally full of ingenious contrivances, and without being clumsy or unduly complicated seems to combine more really useful adjustments than any other stand containing the modern improvements.

The sub-stage and mirror bar both swing around an axis in the plane of the object on the stage. Mr. Bulloch claims, with much reason, to have been the first to apply such an adjustment to the sub-stage, and he now mounts the mirror bar in a similar manner, the two being made to move either together or separately, and either by hand or with a mechanical motion; or the sub-stage with its milled heads can be entirely removed. Thus is attained a facility not hitherto equaled of using either sub-stage or mirror or both together at any angle below the stage

<sup>1</sup>This department is edited by Dr. R. H. Ward, Troy, N. Y.

or in any desirable position above it. The obliquity of illumination is indicated by graduated arcs. The sub-stage itself has centring and rotating as well as vertical movement.

The fine adjustment has been removed to the same position as in Zentmayer's recent stands; but instead of a separate slide, the levers act upon the body by means of the rack itself, by moving steadily, up and down, the box in which the pinion of the coarse adjustment acts. This is forced upwards by a direct action, and downwards by a spiral spring. Great steadiness is attained, as well as the ordinary advantages of removing fine adjustment from the nose-piece. The nose-piece, however, is movable vertically, and has a safety spring as in the usual form of fine adjustment.

The stage is mounted on such a level that when the tube is placed vertically the axis around which the instrument rotates at the base will pass through the object on the stage, and consequently through the focal plane of the objective and of the illuminating apparatus, giving great advantage for optical experiments. The stage itself is sufficiently thin to admit an obliquity of illumination of 67 degrees without special appliances. It has graduated horizontal and vertical movements by means of a screw and a chain moved by milled heads upon the same axis; also a mechanical and graduated rotation around a centre which is easily adjustable to the axis of even a high power objective. It is also supplied with Brown's iris diaphragm. The iris diaphragm is furnished with the society screw so that it can be, if desired, either used in combination with an achromatic condenser, or used as an adapter above the objective itself so as to reduce directly the angle of light in the instrument.

Besides this superb instrument, Mr. Bulloch makes a smaller stand specially suited for diatom work, but well calculated for general use. It is nearly equal to the large stand in completeness and in everything but size, and has a stage (rotating but not mechanical) sufficiently thin to admit light at an obliquity of 73 degrees, and reversible so that the slide can be used on the under side with light at any desired angle up to 90 degrees. He also introduces several styles of small and low priced microscopes in which some of the most excellent and popular English and American stands are reproduced with ingenious additions and improvements.

These instruments are beautiful in form and of excellent workmanship, and they add another notable item to the recent valuable contributions of American workers in this department of science.

MICROSCOPICAL SUPPLIES.—Mr. Chas. Petit, of 151 High street, Stoke Newington, London, England, is sending cover glasses and other small supplies to this country promptly and at a low price. One ounce of thin circles are sent postpaid, for \$1.25, or if thinner glass for \$1.50. Two ounces of squares and circles mixed are

sent for \$2, ground edged slips for \$2 per gross, ornamental paper covers five hundred for \$1, tin cells of any usual size and thickness for from 50 cents to \$1 per gross, and glass cells at from \$1 per gross upwards. One dozen and a half really good unmounted objects are furnished for \$1.

MICROSCOPICAL SOIRÉE.—The Soirée given at the Agricultural and Geological Rooms, under the able direction of Professor Cox, in Indianapolis, on the 30th of January, was largely attended by the most cultivated citizens of the place. Microscopes by Zentmayer, Bulloch, Beck, Hartnack, Grunow and others were in use, and the exhibition was made instructive as well as entertaining. The opening address was made by Professor Cox, and the objects were shown and explained by the various microscopists of the city.

NEW YORK MICROSCOPICAL SOCIETY.—This new society completed its organization by the adoption of a constitution on the 21st of December last. It will meet on the first and third Friday evenings of each month. The officers for the present year are as follows: J. D. Hyatt, president; G. I. Whitehead, vice-president; A. J. Swan, 176 William street, corresponding secretary; R. Hitchcock, recording secretary; W. C. Hubbard, treasurer; D. B. Scott, librarian and acting curator.

NATURE CLUB OF ALBANY.—At the annual election, January 14th, 1878, the following officers were elected: Dr. George T. Stevens, president; Dr. Willis G. Tucker, vice-president; Richard Prescott, secretary.

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## SCIENTIFIC NEWS.

— The occurrence of the hundredth anniversary of the death of Linnæus, on the 10th of January last, gave occasion to all the scientific societies and institutions in Sweden, and to several others abroad, to arrange festive meetings in celebration of the day. The Swedish papers of the succeeding days were full of descriptions of these feasts, and we give our readers a short account of one of them, which was held at the old University of Upsala, the venerable *Alma Mater* of Swedish science for more than 400 years.

At eight o'clock in the morning the bells of the cathedral proclaimed in solemn strokes that the University was going to celebrate the memorial of her greatest son. At half-past eleven the bell-ringing sounded again, calling out the members of consistorium academicum, invited guests, "the supporters and friends of science," and the 1500 students of the University, to proceed from the University to the grand hall of the College, which for this